b. For Successful Message Reception of Ground Uplink Messages, one of the following two criteria **shall** apply:

1. All Successful Message Receptions, OR

2. Only those Successful Message Receptions from ground stations within the range criteria from Table 2-68.

Equipment Required:

Use the RF test signal set as defined in §2.4.10.2, with the addition that the geographic locations contained in the message payloads for ADS-B and Uplink messages should conform with the range limitations of Table 2-67 and Table 2-68 for the equipment class under test.

Measurement Procedures:

The equipment under test must provide a means to confirm the Report Assembly for each Applicable Message. For equipment that complies with §2.2.10.3.a.1 ~~(i.e. all Successful Messages are Applicable Messages), verification of the requirements of §2.2.10.3 can be performed using the procedure of~~, the "Equipment Required" and "Measurement Procedure" given in §2.4.10.2 is appropriate. The ~~means used in §2.4.10.2, Step 3 must be the external report interface of the equipment under test~~method of verifying Report Assembly for Successful Message Reception could include delivery of each message to the equipment's external report interface, an internal data recording which can be reviewed post-test to verify equipment performance, or other appropriate means.

The following procedure applies to equipment that complies with §2.2.10.3.a.2. (i.e. Applicable Messages are only those Successful Messages that meet the range filter criteria). Note that this procedure need be performed on only one of the equipment's antenna ports.

Step 1: Equipment Setup

Apply the RF test signal to the equipment under test, with a signal strength of –80 dBm at the equipment antenna port. Supply the equipment under test and the test signal generator with a suitable UTC time reference signal. Supply the equipment under test with a suitable position reference.

Step 2: Perform Message Receptions

Allow the equipment under test to receive the test messages for a minimum of 8 seconds.

Step 3: Verify All Applicable Messages

~~Verify~~ Using an appropriate means (as discussed above), verify that the equipment under test ~~provides~~ assembles a report ~~via the external report interface~~ for all messages that meet the range criteria.

Step 4: Increase the number of test targets that are within the range criteria

Modify the geographic position contained in the ADS-B and Ground Uplink test messages, such that the number of targets that are within the range criteria of Table 2-67 and Table 2-68 is increased by ten (10) percent.

Step 5: Perform Message Receptions

Allow the equipment under test to receive the test messages for a minimum of 8 seconds.

Step 6: Verify All Applicable Messages

Using an appropriate means (as discussed above), verify~~Verify~~ that the equipment under test ~~provides~~ assembles a report ~~via the external report interface~~ for the number of targets and Ground Stations shown in Table 2-67 and Table 2-68, which are most proximate to the position reference given to the equipment under test in Step 1.

2.4.10.4 Verification of Message Reception-to-Report Completion Time (§2.2.10.4)

Purpose/Introduction:

All ADS-B Applicable Messages **shall** be output from the Report Assembly Function within 200 milliseconds of message input.

All Ground Uplink Applicable Messages **shall** be output from the Report Assembly Function within 500 milliseconds of message input.

Equipment Required:

Use the RF test signal set as defined in §2.4.10.3.

Measurement Procedures:

The time delay between Message Reception and Report Completion can be measured by utilizing an internal time-stamp that is recorded at the instant of that Report Completion has occurred. These time stamps can be provided by the equipment under test, such as an internal data log, or through use of an external device that applies time stamps to reports that appear at the equipment's external interface. Other suitable means may be provided by the manufacturer.

Step 1: Equipment Setup and Test Conduct

Perform Steps 1 through 3 of §2.4.10.2.

Step 2: Measure the Reception-to-Report Completion Time

For each message that results in an Applicable Message, and therefore results in report delivery to the external interface, compute the difference between the time the message was transmitted by the RF test signal generator, and the Report Completion time. Verify that the Message-to-Report Completion time